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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,455	02/10/2005	Eberhard Perplies	2002DE430	8656

7590 12/21/2007  
Klaus Schweitzer  
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425 C South Sharon Amity Road  
Charlotte, NC 28211

EXAMINER

BLAND, LAYLA D

ART UNIT	PAPER NUMBER
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1623

MAIL DATE	DELIVERY MODE
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12/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/524,455	Applicant(s) PERPLIES ET AL.	
	Examiner Layla Bland	Art Unit 1623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/21/2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-9, 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is a response to Applicant's amendment submitted November 21, 2007, wherein claim 2 is cancelled, claims 3 and 6 are amended, and new claim 11 is added. Claims 1, 3-9, and 11 are examined on the merits herein.

In view of the cancellation of claim 2, all rejections made with respect to that claim in the previous office action are withdrawn.

In view of Applicant's amendment submitted November 21, 2007, the objection to claim 6 for a grammatical error is withdrawn.

In view of Applicant's amendment submitted November 21, 2007, the rejection of claim 3 under 35 USC 112, second paragraph, for being indefinite, is withdrawn.

In view of the new ground of rejection presented in this office action, all prior art rejections of the previous office action are withdrawn.

The following are new rejections not made in the previous office action:

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 (and dependent claims) is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "temporarily cross-linked cellulose ethers." This limitation is not defined in the specification. However, the specification does mention reversibly crosslinked cellulose ethers. For purposes of examination, the term is interpreted to mean that the reaction is reversible. Clarification is requested.

Claim 1 recites the limitation "solvation delay." Solvation delay is described in the specification as to mean that after mixing the components, including cellulose ether, a certain time passes until the cellulose ether increases the viscosity of the mixture. This is interpreted to mean that some amount of time passes before the cellulose ether dissolves. The specification does not define what an acceptable solvation delay is, and the skilled artisan would not be apprised of the metes and bounds of the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meukart et al. (US 3,072,635, January 8, 1963) in view of Herron et al. (EP 0252649, January 13, 1988, of record).

Meukart et al. teach a method for producing cellulose derivatives comprising treating a cellulose ether with glyoxal [column 1, lines 37-49]. Cellulose ethers such as methyl hydroxyethyl cellulose, ethyl hydroxyethyl cellulose, and others may be used

[column 2, lines 10-30]. The glyoxal can be dissolved in a solvent such as acetone, methanol, or water, the cellulose derivative suspended therein with agitation for less than 30 minutes, followed by separation of the liquid to give a solid containing about 20 to 80 percent of an adsorbed solution, followed by oven drying about about 100°C, during which the reaction takes place [column 3, lines 14-47]. In one example, the reaction takes place over about 30 minutes [column 5, Example 1]. Glyoxal can be used in an amount of 0.001 to 0.2 mol per mol of cellulose derivative [claim 1]. The products of this method disperse in cold water without forming lumps and dissolve within 15 to 20 minutes [column 3, lines 43-48]. Although Meukart et al. do not address the reversibility of the reaction, the skilled artisan would understand that the reaction of an alcohol and an aldehyde to form a hemiacetal is a reversible one.

Meukart et al. do not teach a reaction with a chemical compound having at least one acid group and at least one aldehyde group, or a reaction with glyoxylic acid.

Herron et al. teach a process of crosslinking cellulose fibers using a dialdehyde or dialdehyde acid analog [page 3, lines 35-46]. Especially preferred are glutaraldehyde, glyoxal, and glyoxylic acid [page 4, lines 28-29].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Meukart et al. using glyoxylic acid instead of glyoxal. Herron et al. teach that either glyoxal or glyoxylic acid are preferred agents for preparing crosslinked cellulose. The skilled artisan could have substituted glyoxylic acid for glyoxal and could have predicted the success of that substitution, based on the teachings of Herron et al.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-9, and 11 have been considered but are moot in view of the new ground(s) of rejection.

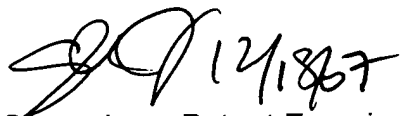
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Layla Bland whose telephone number is (571) 272-9572. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Layla Bland  
Patent Examiner  
Art Unit 1623  
December 17, 2007

Shaojia Anna Jiang  
  
Supervisory Patent Examiner  
Art Unit 1623  
December 17, 2007